follow or they do not have customized service standards. Moreover, basing on the result, medical staffs have no common awareness what standards they must follow for their services, except awareness of treatment and diagnosis; there is insufficient information about service standards. **CONCLUSIONS:** One third of organizations attended in surveys operates their operations without the organization's service standards. Service standards of an organization are developed by Medical directors, Quality department and Professional council. Service standards of organizations are not approved, there is no any control to implement service standards, or the service standards are inappropriate and no unfavorable environment to implement service standards. Even the control on "Common operation standards"'s implementation is good, no unfavorable environment to implement the standard. Moreover registration of mistakes related to "Common operation standards" is insufficient, measures and warnings to improve the low indication of mistakes are not taken well.

PHP101

PRIORITY SETTING OF NEW MEDICAL INTERVENTIONS IN TAIWAN: A MULTICRITERIA DECISION ANALYSIS

Lin CW[1], Tsai WS[2], Shen TT[3]

[1]*I-Shou University, Kaohsiung, Taiwan,* [2]*National Health Insurance Administration, Ministry of Health and Welfare, Taipei, Taiwan,* [3]*E-DA Hospital, Kaohsiung, Taiwan*

OBJECTIVES: Priority setting in the allocation of new medical interventions is increasingly based on formulated values. Before drafting the new medical service items and fee schedule, the National Health Insurance Act of Taiwan identifies four prioritizing rules -human health, medical ethics, cost-effectiveness, and the finances of the Insurance respectively to compliance with. Our study objectives are to compare the policy makers' actual value preferences with these four official formulated principles and to guide the Ministry of Health and Welfare in Taiwan in the priority setting of new medical interventions. **METHODS:** We used a multicriteria decision analytical framework. In total 65 respondents participated in a discrete choice experiment to weigh their relative importance of six selected policy criteria for priority setting. Regression analysis was used to rank order a set of new recently adopted medical interventions on the basis of these criteria and related to weights. **RESULTS:** Policymakers considered severity of disease, people of middle-age, cost effectiveness as the most important criteria for priority setting of interventions, followed by low budget impact. Signs of coefficients of many beneficiaries and large individual benefits did not have the expected direction. Certain interventions in HIV Ag/Ab test, HLA-B 1502 gene typing, HCV Genotyping Test and orthopedic surgery rank highest. Cochlear implant ranks 12th out of 22 medical interventions. **CONCLUSIONS:** Policy makers' values are partially in agreement with principles formulated in National Health Insurance laws. Multi-criteria decision approaches may provide a tool to guide explicit allocation decisions.

PHP102

FEASIBILITY OF PHARMACOECONOMIC EVALUATIONS OF TRADITIONAL CHINESE MEDICINE FROM THE PERSPECTIVES OF THE HEALTH INSURANCE REVIEW & ASSESSMENT SERVICE IN SOUTH KOREA

Lee C[1], Wasserman M[2], Guan Q[2]

[1]*Double Helix Consulting, London, UK,* [2]*Double Helix Consulting, Singapore*

OBJECTIVES: Having maintained close association with China through the ages, a number of traditional Chinese medicine hospitals have prevailed in South Korea despite abundance of western medicines. Given this prevalence of herbal medicinal therapy and the increasing health care expenditure, the purpose of this research is to explore the feasibility of formally establishing guidelines and conducting pharmacoeconomic evaluations for coverage selection of traditional Chinese medicine from the perspective of decision makers in the Republic of Korea. **METHODS:** Research was conducted, using qualitative telephone and email-based interviews with individuals involved in Health Insurance Review & Assessment Service (HIRA) and KOLs in South Korea in order to gain a broad range of perspectives on the topic. The interviewees were asked to share their opinions on the significance and viability of developing formal guidelines and performing economic evaluations for traditional herbal medicines. Moreover, they were asked to identify critical issues around applying established pharmacoeconomic guidelines to traditional medicinal therapy. **RESULTS:** In the primary research, the majority of interviewees agreed on the importance of conducting pharmacoeconomic evaluations for traditional medicine. They recognised that a great amount of herbal medicine is produced and consumed. Patients pay for this medicine as out-of-pocket expense, although the outcomes are not well measured and understood by either the government or the public. Furthermore, they acknowledged that existing pharmacoeconomic guidelines may not always be appropriate for making coverage decisions for these herbal treatments. Finally, they expected that separate guidelines specifically targeted at traditional medicine may develop, but not in a very near future. **CONCLUSIONS:** Given the extensive use of herbal medicine by the public, using pharmacoeconomic evaluation for reimbursement decision may encourage patients and physicians to choose more cost effective treatments and thus prevent the dramatic increase in total health care expenditure without demonstrated improvement in health outcomes.

PHP103

RISK-SHARING AGREEMENTS IN AUSTRALIA: ATTITUDE TOWARDS RISK-SHARING ARRANGEMENTS WITH THE DEPARTMENT OF HEALTH FOR THE PBS-LISTING OF PHARMACEUTICALS

Makino K[1], Tilden D[2], Kamei M[3], Shibata K[4]

[1]*THEMA Consulting Pty. Ltd., Sydney, Australia,* [2]*Thema Consulting, Sydney, Australia,* [3]*Nihon University, Chiba, Japan,* [4]*Showa University, Tokyo, Japan*

OBJECTIVES: Conditional reimbursement approval for pharmaceuticals, for example, risk-sharing arrangement (RSA) involving price-volume agreement or various post-launch monitoring requirements, is becoming a standard practice in Australia, especially for novel treatments with high ICER and/or potentially significant budget impact. Uptake of RSAs are relatively slow in other jurisdictions. Efficient implementation of an RSA requires active involvement from all stakeholders, in particular, drug manufacturers and the decision makers. This study reports the findings from a survey of pricing and reimbursement experts in Australia to gain insight into their attitude/opinions of RSAs from their own personal experience. **METHODS:** Senior-level health economists and consultants were targeted. The survey included questions about responder's demographics, the number and type of RSAs they have personally been involved with, and their experience and opinions about RSAs. A general overview of RSAs is also provided to better contextualise the survey findings. **RESULTS:** Ten experts participated on an anonymous basis. They in total have been involved in 403 submissions, and 56 RSAs of various types. Capped cost agreements were most frequently employed (>70% of all RSAs). 'Hidden price' is also frequently agreed. Respondents generally had positive attitude towards RSA (mean of 3 using a 1-5 scale) mainly because it can potentially benefit timeline and address global pricing issues. Concerns were however raised about the fact that the 'risk' is entirely borne by the industry in many cases and RSA has now become an integral element in the PBAC's decision making process. **CONCLUSIONS:** RSA is generally well perceived among industry experts in Australia, whilst an increasing role of PBAC in defining clauses in the agreement is seen as a hurdle against productive involvement from the industry. The Australian model of RSA may offer a useful template for other jurisdictions.

PHP104

RISK SHARING AGREEMENT CONSIDERATIONS FOR PHARMACEUTICALS IN CHINA MARKET

Zhang P[1], Cui X[2], Qian Y[2]

[1]*Sanofi China, Shanghai, China,* [2]*Sanofi China, Beijing, China*

OBJECTIVES: This study is designed to review current 'risk-sharing' schemes worldwide and in China, and further examine what kind of situations where 'risk-sharing' schemes should be considered. **METHODS:** A literature review was undertaken to identify existing schemes in developed countries. A review of released policies in China was also conducted to understand China's current rules of practice. Cases studies were established for detailing agreement structure and potential impact on payers and industry. **RESULTS:** Risk-sharing schemes are introduced to the market in the context of fast growing health care cost and uncertain drug values. Nearly almost all of China's scheme practices are financial-based agreements and don't integrate drug's real world performance. Unlike mature market, risk-sharing agreement in China is more often applied to established products rather than newly-entered innovative drugs. A typical successful agreement in China has several must-have factors, including discounted drug price, purchase/free drug package and charity program. When considering a sustainable win-win risk-sharing scheme, a company must be very determined and assess its product carefully to decide whether the disease is in a high priority and there are currently few effective treatments; where policies can be leveraged and opportunities can be created for negotiation; whether strong lobbying message and product value proposition can be developed to meet the interests of the stakeholders; whether proposed scheme (price and additional service) can substantially lower health service cost as well as to enhance reimbursement; whether management team can ensure well-functioning operational capabilities for legal, administrative and delivery support. **CONCLUSIONS:** With more innovative drugs being introduced to China market; 'risk-sharing' schemes will become more popular as national reimbursement drug list cannot immediately cover the increasing cost. Global experience also suggests there is a trend that 'risk-sharing' agreement will be more often considered as a market access strategy for new products in the future.

HEALTH CARE USE & POLICY STUDIES – Conceptual Papers

PHP105

MODEL BASED MEDICINE: A NEXT FRONTIER IN HEALTH CARE

Dinh T

Evidera, San Francisco, CA, USA

In the last three decades, evidence-based medicine (EBM) has been the driving force in shaping guidelines and clinical decision making in screening, prevention and treatment of diseases. Evidence review, evidence grading and meta-analysis of trials are standardized and routinely conducted. However, recent technological developments have significant impacts on future directions of EBM. With recent advances in health information technology, electronic medical records (EMRs), proteomics and genomics, clinical evidence has become increasingly abundant and diverse. At the same time, the inputs into medical decision making have also become increasingly complex. Model Based Medicine (MBM) has recently emerged as a framework to address the above challenges. MBM is the use of large-scale integrated physiology and pathology-driven mathematical models to translate and to synthesize existing evidence and medical knowledge into a unified framework, which will then be used to support clinical decision making at individual patient level. MBM not only incorporates all available evidence and most up-to-date understanding of diseases but also account for uncertainties in data and gaps in knowledge. MBM serves as an interface between evidence and physicians, allowing rapid extraction of quantitative, robust and already synthesized information for customized clinical decision making. The decisions can be optimized not only based on the therapeutic efficacy of health interventions, current health status of patients but also patient's health behavior (e. g. past likelihood to comply with treatment recommendations) and preferences. Based on our recent experience at Archimedes, I will present several case studies to illustrate the power of MBM in leveraging data from EHR and other data sources to support decision making at both population and individual level. I will also speak about the scientific and technical challenges faced by MBM and our strategy in addressing these challenges, including developments of standardized and automatic tools for data integration and synthesis, model calibration and validation, uncertainty quantification and optimal design for model-physician interface.

PHP106
THE COVERAGE WITH CLINICAL EVIDENCE-INFORMED DECISIONS (CCEDS): A NEW HEALTH CARE PAYMENT MODEL IN CHINA
He J, Liu G
Health Economics Association of Guangdong Province, Guangzhou, China
OBJECTIVES: The traditional payment methods like fee-for-service and capitation were applied to public health in China, the former lead to a problem that health insurance cost rising rapidly, while the latter could result in insufficient funds for covering the cost of services needed. This study aim to suggest a new payment model, based on the coverage with clinical evidence-informed decisions (CCEDs), for overcoming the imperfections and making sustained improvement in the medical insurance policy. **METHODS:** This new health care payment model CCEDs is a single, risk-adjusted, prospective (or retrospective) payment model, used as a tool to bring a new rationale to payment decisions across inpatients and outpatients diagnosed with a specific condition. CCEDs make payment decisions on the basis of the following issues: the resources required to provide care as recommended according to the clinical practice guidelines; the provider performance on measures of clinical process, treatment variation, outcomes of care and reimbursement; the expert advice in specific health care field. **RESULTS:** This new model CCEDs designed to bring down medical costs and enhance the quality of care, CCEDs also come with opportunities to limit both underuse and overuse, eliminate risk selection problems, lower administrative cost, enhance transparency of results may earning patients trust, increase both patient outcomes and patient satisfaction. Incentives of CCEDs could encourage collaborative teamwork, and promote clinical integration between providers across disparate settings. But, meanwhile encroachment of the market could undermine the professional discretion in the long-term. **CONCLUSION:** A new payment model, based on coverage with clinical evidence-informed decisions, might provide new options to get high-quality treatment and low medical cost for patients.

PHP107
CHALLENGES AND OPPORTUNITIES IN THE MALAYSIAN HEALTH CARE SYSTEM
Mohd Tahir NA[1], Li SC[2], Thomas P[3]
[1]*University of Newcastle, New South Wales, Australia,* [2]*University of Newcastle, Callaghan, Australia,* [3]*Taylor's University, Selangor, Malaysia*
INTRODUCTION: Malaysia is a multicultural society with a population of over 28 million and classified as an upper middle-income country by the World Bank. Malaysia inherited a health care system at independence from British colonial rule and provides universal and low cost access to the health care needs of all citizens. Improvements in health indices such as reduction in mortality rate and increase in life expectancy using a relatively small amount of GDP (~4%) being spent on health services shows that Malaysians have benefited from a well-developed health care system. **CHALLENGES:** Demographic and disease pattern transition, increasing cost of health care together with increasing demand towards better health outcomes pose challenges in sustaining the system. Historical-based health care financing has also created inequity in access and allocative inefficiency. Equity access issues such as uneven human resource distribution and limitations in secondary access to consult specialists remain a problem despite generally improved access to facilities for rural population. Urbanization however has created vertical inequity and strains to existing public health facilities. The inadequate availability of public health facilities and manpower has led to a proliferation of private health facilities. Unethical prescribers' behaviour, queue jumping and dependence on profit-oriented private health care providers further complicate the issues. **OPPORTUNITIES:** Restructuring of the financial system by introducing national health insurance or co-payment can reduce moral hazards associated with the universal low cost system. Strategizing budget allocation in building facilities, implementing interventions and preventive programmes based on recent transition in health are important measures to be considered. Quality use of medicines concept implementation could improve the procurement, supply and distribution system as well as skills, awareness and knowledge of prescribers and patients. Access and efficiency of the health care system could also be improved through this concept. Practices and facilities sharing nationally and internationally, with neighbouring countries, would also improve access.

PHP108
COLLABORATIVE APPROACH IN ACCESSING HOMOGENEOUS MEDICAL DATA IN GRID-BASED ENVIRONMENT (ENHANCING DISEASES CLASSIFICATION)
Khor ET
University Sains Malaysia, Penang, Malaysia
OBJECTIVES: The proposed initiative presents the collaborative approach in classification of preliminary characteristics of diseases using sample clinical data that allows the integration of parallel processing in homogeneous grid-based environment. The research focuses on three objectives mainly: 1. To provide collaborative classification in homogeneous resources. 2. To conduct parallel processing in extraction of preliminary characteristics using electronic medical records (EMR) data. 3. To perform characterization for disease features in grid-based neural network classification. **METHODS:** The study conducted on Globus (Grid) clustering network and interconnected with homogeneous resources as test bed. The integration of homogeneous sample diseases databases for execution of computational application were submitted to the GRAM service to the local scheduling system. The result for time and threads computation was computed on the test bed for homogeneous resources in grid platform with Feed-Forward Neural Networks. **PRELIMINARY RESULTS:** In the training phase, the diversity of clinical data features such as age, gender, race/ethnicity were imported as input to the Globus nodes with the aid of Globus automated scheduling for diseases' characteristics classification. The coordination of resources aims to address the issue of optimization in distributed grid resources. The evaluation of outcome includes response time and co-allocation of multiple resources to meet complex clustering of diseases' characteristics using neural networks classification.

PHP110
ARCHIMEDES: A LARGE SCALE SIMULATION SYSTEM FOR HEALTH CARE RESEARCH AND ITS APPLICATIONS FOR ASIAN COUNTRIES
Dinh T
Evidera, San Francisco, CA, USA
The Archimedes Model is a carefully validated, clinically realistic, simulation model of diseases and health care. By using advanced methods of mathematics, computing, and data systems, the Model enables researchers and decision makers to make better informed decisions. The Archimedes Model includes a wide range of diseases/conditions (diabetes, cardiovascular diseases, COPD, obesity, cancers) and detailed descriptions of health care delivery systems, interventions, tests, and treatments and patient and physician behaviors. The Model has been used by many organizations (e. g. goverments, pharmaceutical companies, insurance companies, disease organziations) accross the globe to help answer a wide variety of questions related to clinical trials, policy setting, performance measurement, and health economics and outcomes research. The Model has been adapted to a wide range of settings including US, UK, France, Italy, Sweden, Norway, Poland, Japan, Brazil, and California. We will highlight a number of projects that were supported by EU and Japan, in which the Model was used to guide decision making around management of diabetes. We will also discuss the potential applications of adapting the Archimedes Model to other Asian countries (e. g. India or China) beyond Japan.

PHP111
'SERIOUS ILLNESS INSURANCE' IN CHINA: IMPACT OF NOVEL PUBLIC-PRIVATE PAYMENT MODELS ON ACCESS TO HEALTH CARE AND DRUGS
Li X[1], Wang Y[2], Saraf S[3], Sherwin G[3], Akpinar P[3]
[1]*ICON Commercialisation & Outcomes, London, UK,* [2]*National Social Security Institute, Ministry of Human Resources and Social Security of P.R.C, Beijing, China,* [3]*ICON Pricing and Market Access, London, UK*
OBJECTIVES: In mainland China, a large gap in the funding of catastrophic illnesses has existed for the past decade. In 2012, 'serious illness insurance' was proposed by the Government that involves using a portion of funds from the public insurance and additional financial support from the government to cover major illnesses. Commercial health insurers collaborate with local authorities to provide this coverage through various models in different cities and regions. This research seeks to understand current models in different regions and to evaluate the implications for health care coverage and access to drugs. **METHODOLOGY:** We conducted extensive literature review to understand the current landscape of the serious illness insurance. Primary research with a mix of stakeholders including private health insurers and regulatory authorities was also conducted in different provinces/ cities to further evaluate the regulatory framework, disease-specific coverage, funding pathways and implications for access to drugs. **RESULTS:** Numerous models that vary with regards to design, funding and implementation are being piloted across provinces/ cities. Our research findings suggested that limited experience of the private insurers and uncertainty around profitability places significant challenges on the future development of 'serious illness insurance'. However, implementation of these insurance schemes has positively impacted health care coverage and access to drugs. **CONCLUSIONS:** Our results demonstrate the large degree of variation among models of 'serious illness insurance' in different regions. This new public-private partnership will likely continue to positively impact patient access to health care and medicines, increase provincial coverage and also boost the growth of the private insurance market.

PHP113
BEST POSSIBLE HEALTH OUTCOMES AT DIFFERENT SOCIOECONOMIC LEVELS OF COMMUNITY: THE BETTER CARE PLAN
Singh A, Khera K
Manipal College of Pharmaceutical Sciences, Manipal, India
OBJECTIVES: Proposal of an ideal model for obtaining the best possible health outcomes at different socioeconomic levels of community/population in India. **CONCLUSION:** Various social inequities viz. race; ethnicity, religions and economic status affect operationalization of health decisions as well as health outcomes invariably. These all inequities define socioeconomic levels of any community. Assessing health equity needs comparing health and its social inequities/determinants within different levels. It is attainable call to standardize the process of health care decision making; to obtain best possible health outcomes. Hereby, we propose an ideal model; a "Better Care Plan" which would help in opting best possible health outcomes at different socioeconomic levels. Foremost, we require to understand the mindset of people on health care needs. We found that one requires clear communication; mutual collaboration between clinician, patient and other health care professionals; professionally competent and compassionate staff and their services; continuity of care and professional excellence required mostly for chronic ailment. In next step "better care plan" undertakes evaluation of the impediment issues that might rise at various points related to patient, staff and system. Diverse quality dimensions proposed by different studies and models would be aimed to standardize the process of health care decision making. The six areas of "Better Care Plan" involves focus on patient; rationale; efficiency; opportune, safety and potency; which would help to obtain optimal health care outcomes at different socioeconomic levels. Privatization; where private organizations are committed to serve people with government schemes; is one of the important issue which needs improvement. Basic implementations such as community services through home medication reviews, awareness programs will be helpful with "Better Care Plan".

INFECTION – Clinical Outcomes Studies

PIN1
IMPACT OF CIGARETTE AND ALCOHOL USE ON ADVERSE DRUG REACTIONS OF HAART THERAPY AMONG HIV/AIDS PATIENTS
Khan AH[1], Syed Sulaiman SA[1], Khan K[1], Soo CT[2], Akhtar A[1]